

STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP

Check this box if no longer subject to Section 16. Form 4 or Form 5 obligations may continue. See Instruction 1(b).

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934 or Section 30(h) of the Investment Company Act of 1940

| OMB APPROVAL | |
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| OMB Number: | 3235-0287 |
| Estimated average burden hours per response: | 0.5 |

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| 1. Name and Address of Reporting Person * BRENNAN MURRAY (Last) (First) (Middle) MEMORIAL SLOAN KETTERING CANCER CENTER 1275 YORK AVENUE (Street) NEW YORK NY 10021 (City) (State) (Zip) | 2. Issuer Name and Ticker or Trading Symbol ZIOPHARM ONCOLOGY INC [ZIOP] | 5. Relationship of Reporting Person(s) to Issuer (Check all applicable) <input checked="" type="checkbox"/> Director 10% Owner Officer (give title below) Other (specify below) |
| | 3. Date of Earliest Transaction (Month/Day/Year) 05/13/2009 | |
| | | 6. Individual or Joint/Group Filing (Check Applicable Line) <input checked="" type="checkbox"/> Form filed by One Reporting Person <input type="checkbox"/> Form filed by More than One Reporting Person |

Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned

| 1. Title of Security (Instr. 3) | 2. Transaction Date (Month/Day/Year) | 2A. Deemed Execution Date, if any (Month/Day/Year) | 3. Transaction Code (Instr. 8) | | 4. Securities Acquired (A) or Disposed Of (D) (Instr. 3, 4 and 5) | | | 5. Amount of Securities Beneficially Owned Following Reported Transaction(s) (Instr. 3 and 4) | 6. Ownership Form: Direct (D) or Indirect (I) (Instr. 4) | 7. Nature of Indirect Beneficial Ownership (Instr. 4) |
|---------------------------------|--------------------------------------|--|--------------------------------|---|---|------------|-------|---|--|---|
| | | | Code | V | Amount | (A) or (D) | Price | | | |
| Common Stock, \$.001 par value | | | | | | | | 15,000 | D | |

Table II - Derivative Securities Acquired, Disposed of, or Beneficially Owned (e.g., puts, calls, warrants, options, convertible securities)

| 1. Title of Derivative Security (Instr. 3) | 2. Conversion or Exercise Price of Derivative Security | 3. Transaction Date (Month/Day/Year) | 3A. Deemed Execution Date, if any (Month/Day/Year) | 4. Transaction Code (Instr. 8) | | 5. Number of Derivative Securities Acquired (A) or Disposed of (D) (Instr. 3, 4 and 5) | | 6. Date Exercisable and Expiration Date (Month/Day/Year) | | 7. Title and Amount of Securities Underlying Derivative Security (Instr. 3 and 4) | 8. Price of Derivative Security (Instr. 5) | 9. Number of derivative Securities Beneficially Owned Following Reported Transaction(s) (Instr. 4) | 10. Ownership Form: Direct (D) or Indirect (I) (Instr. 4) | 11. Nature of Indirect Beneficial Ownership (Instr. 4) |
|--|--|--------------------------------------|--|--------------------------------|---|--|-----|--|-----------------|---|--|--|---|--|
| | | | | Code | V | (A) | (D) | Date Exercisable | Expiration Date | | | | | |
| Director Stock Option | \$4.31 | | | | | | | (1) | 12/22/2014 | Common Stock, \$.001 par value | 15,029 | 15,029 | D | |
| Stock Option (right to buy) | \$5.01 | | | | | | | 04/26/2006 | 04/26/2016 | Common Stock | 15,000 | 15,000 | D | |
| Stock Option (right to buy) | \$6.49 | | | | | | | (2) | 12/13/2016 | Common Stock | 15,000 | 15,000 | D | |
| Stock Option (right to buy) | \$4.85 | | | | | | | (3) | 06/18/2017 | Common Stock | 15,000 | 15,000 | D | |
| Stock Option (right to buy) | \$2.73 | | | | | | | (4) | 12/12/2017 | Common Stock | 20,000 | 20,000 | D | |
| Stock Option (right to buy) | \$0.7 | 05/13/2009 | | A | | 15,000 | | (5) | 05/13/2019 | Common Stock | 15,000 | \$0 | 15,000 | D |

Explanation of Responses:

- 7,515 shares vest on 12/22/05 and 7,514 shares vest on 12/22/06.
- 5,000 shares vest on each of 12/13/07, 12/13/08 and 12/13/09.
- 5,000 shares vest on each of 6/18/08, 6/18/09 and 6/18/10.
- 6,667 shares vest on each of 12/12/08 and 12/12/09; 6,666 shares vest on 12/12/10.
- 5,000 shares vest on each of 12/31/09, 6/30/10 and 12/31/10.

/s/ Murray Brennan

05/14/2009

** Signature of Reporting Person

Date

Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly.

* If the form is filed by more than one reporting person, see Instruction 4 (b)(v).

** Intentional misstatements or omissions of facts constitute Federal Criminal Violations See 18 U.S.C. 1001 and 15 U.S.C. 78ff(a).

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, see Instruction 6 for procedure.

Persons who respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB Number.

